

## We Claim:

- 1 1. An apparatus for providing power to at least one line driver device in a  
2 communication system; each respective line driver device of said at least one line  
3 driver device having a respective inherent internal voltage drop and having a  
4 respective output terminal coupled with a respective communication loop; each said  
5 respective communication loop requiring a respective minimum operational voltage at  
6 said respective output terminal; the apparatus comprising:  
7 (a) at least one control device; said at least one control device being coupled with said  
8 respective output terminal of each said respective line driver device; and  
9 (b) at least one power supply device; said at least one power supply device being  
10 coupled with said at least one control device and with each said respective line  
11 driver device; said at least one power supply device cooperating with said at least  
12 one control device to deliver a respective supplied voltage to each said respective  
13 line driver device; said respective supplied voltage being substantially equal with  
14 said respective minimum operational voltage less said respective inherent internal  
15 voltage drop for each said respective line driver device.
- 1 2. An apparatus for providing power to at least one line driver device in a  
2 communication system as recited in Claim 1 wherein said at least one control device  
3 is a respective control device coupled with each said respective output terminal.
- 1 3. An apparatus for providing power to at least one line driver device in a  
2 communication system as recited in Claim 1 wherein said at least one control device  
3 is a single control device coupled with each said respective output terminal.
- 1 4. An apparatus for providing power to at least one line driver device in a  
2 communication system as recited in Claim 1 wherein said at least one power supply  
3 device is a respective power supply device coupled with each said respective line  
4 driver device.

- 1 5. An apparatus for providing power to at least one line driver device in a  
2 communication system as recited in Claim 1 wherein said at least one power supply  
3 device is a single power supply device coupled with each said respective line driver  
4 device.
- 1 6. An apparatus for providing power to at least one line driver device in a  
2 communication system as recited in Claim 2 wherein said at least one power supply  
3 device is a respective power supply device coupled with each said respective line  
4 driver device.
- 1 7. An apparatus for providing power to at least one line driver device in a  
2 communication system as recited in Claim 3 wherein said at least one power supply  
3 device is a respective power supply device coupled with each said respective line  
4 driver device.
- 1 8. An apparatus for providing power to at least one line driver device in a  
2 communication system as recited in Claim 2 wherein said at least one power supply  
3 device is a single power supply device coupled with each said respective line driver  
4 device.
- 1 9. An apparatus for providing power to at least one line driver device in a  
2 communication system as recited in Claim 3 wherein said at least one power supply  
3 device is a single power supply device coupled with each said respective line driver  
4 device.
- 1 10. An apparatus for providing power to selected line driver devices of a plurality of line  
2 driver devices in a communication system; each selected line driver device having a  
3 respective inherent internal voltage drop; each selected line driver device being  
4 coupled with a respective communication loop and providing a respective minimum  
5 operational voltage to said respective communication loop; the apparatus comprising:

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- 6 (a) a control means for controlling supply voltage to said selected line driver devices;  
7 said control means being coupled with said selected line driver devices; and  
8 (b) a power supply means; said power supply means being coupled with said control  
9 means and with said selected line driver devices; said power supply means  
10 cooperating with said control means to deliver a respective supply voltage to  
11 respective said selected line driver devices; said respective supply voltage being at  
12 least equal with said respective minimum operational voltage less said respective  
13 inherent internal voltage drop for each said respective selected line driver device.

1 11. An apparatus for providing power to selected line driver devices of a plurality of line  
2 driver devices in a communication system as recited in Claim 10 wherein said control  
3 means is a respective control device coupled with each said respective selected line  
4 driver device.

1 12. An apparatus for providing power to selected line driver devices of a plurality of line  
2 driver devices in a communication system as recited in Claim 10 wherein said control  
3 means is a single control device coupled with each said respective selected line driver  
4 device.

1 13. An apparatus for providing power to selected line driver devices of a plurality of line  
2 driver devices in a communication system as recited in Claim 10 wherein said power  
3 supply means is a respective power supply device coupled with each said respective  
4 selected line driver device.

1 14. An apparatus for providing power to selected line driver devices of a plurality of line  
2 driver devices in a communication system as recited in Claim 10 wherein said power  
3 supply means is a single power supply device coupled with each said respective  
4 selected line driver device.

1 15. An apparatus for providing power to selected line driver devices of a plurality of line  
2 driver devices in a communication system as recited in Claim 11 wherein said power  
3 supply means is a respective power supply device coupled with each said respective  
4 selected line driver device.

1 16. An apparatus for providing power to selected line driver devices of a plurality of line  
2 driver devices in a communication system as recited in Claim 12 wherein said power  
3 supply means is a respective power supply device coupled with each said respective  
4 selected line driver device.

1 17. An apparatus for providing power to selected line driver devices of a plurality of line  
2 driver devices in a communication system as recited in Claim 11 wherein said power  
3 supply means is a single power supply device coupled with each said respective  
4 selected line driver device.

1 18. An apparatus for providing power to selected line driver devices of a plurality of line  
2 driver devices in a communication system as recited in Claim 12 wherein said power  
3 supply means is a single power supply device coupled with each said respective  
4 selected line driver device.

1 19. An apparatus for providing power to selected line driver devices of a plurality of line  
2 driver devices in a communication system as recited in Claim 10 wherein said control  
3 means is coupled with said selected line driver devices via individual control lines  
4 intermediate each respective said selected line driver device and said control means.

1 20. An apparatus for providing power to selected line driver devices of a plurality of line  
2 driver devices in a communication system as recited in Claim 10 wherein said control  
3 means is coupled with said selected line driver devices via a communication bus  
4 intermediate said selected line driver devices and said control means; each respective  
5 said selected line driver device being assigned a respective address; said control

6 means identifying information received via said communication bus according to an  
7 accompanying respective said selected line driver address.

1 21. An apparatus for providing power to selected line driver devices of a plurality of line  
2 driver devices in a communication system as recited in Claim 10 wherein said control  
3 means is coupled with said selected line driver devices via individual communication  
4 lines intermediate each respective said selected line driver device and said control  
5 means.

1 22. An apparatus for providing power to selected line driver devices of a plurality of line  
2 driver devices in a communication system as recited in Claim 10 wherein said control  
3 means is coupled with said selected line driver devices via a multiplexer for pollingly  
4 determining extant operational voltage for said respective communication loops.

1 23. An apparatus for providing power to selected line driver devices of a plurality of line  
2 driver devices in a communication system as recited in Claim 10 wherein said power  
3 supply means is coupled with said selected line driver devices via a control bus  
4 intermediate said selected line driver devices and said power supply means; each  
5 respective said selected line driver device being assigned a respective address; said  
6 power supply means identifying a destination for information dispatched via said  
7 control bus according to an accompanying respective said selected line driver address.

1 24. An apparatus for providing power to selected line driver devices of a plurality of line  
2 driver devices in a communication system as recited in Claim 10 wherein said power  
3 supply means is coupled with said selected line driver devices via individual  
4 communication lines intermediate each respective said selected line driver device and  
5 said power supply means.

1 25. An apparatus for providing power to selected line driver devices of a plurality of line  
2 driver devices in a communication system as recited in Claim 10 wherein said power

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3 supply means is coupled with said selected line driver devices via a multiplexer for  
4 pollingly identifying a destination for information dispatched from said power supply  
5 means.

1 26. An apparatus for providing power to selected line driver devices of a plurality of line  
2 driver devices in a communication system as recited in Claim 10 wherein said power  
3 supply means further includes a plurality of power supply lines; each said power  
4 supply line of said plurality of power supply lines carrying a predetermined power  
5 supply potential; said power supply means and said control means cooperating to  
6 selectively couple each respective selected line driver device to an appropriate power  
7 supply line of said plurality of power supply lines; said appropriate power supply line  
8 carrying said power supply potential sufficient to at least match said respective supply  
9 voltage.

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